National Institute of Environmental Health Sciences

Adaptation to climate change in Ethiopia and South Africa: Options and constraints

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Year: 2009
Journal: Environmental Science & Policy. 12 (4): 413-426

Abstract:

Climate change is expected to adversely affect agricultural production in Africa. Because agricultural production remains the main source of income for most rural communities in the region, adaptation of the agricultural sector is imperative to protect the livelihoods of the poor and to ensure food security. A better understanding of farmers' perceptions of climate change, ongoing adaptation measures, and the decision-making process is important to inform policies aimed at promoting successful adaptation strategies for the agricultural sector. Using data from a survey of 1800 farm households in South Africa and Ethiopia, this study presents the adaptation strategies used by farmers in both countries and analyzes the factors influencing the decision to adapt. We find that the most common adaptation strategies include: use of different crops or crop varieties, planting trees, soil conservation, changing planting dates, and irrigation. However, despite having perceived changes in temperature and rainfall, a large percentage of farmers did not make any adjustments to their farming practices. The main barriers to adaptation cited by farmers were lack of access to credit in South Africa and lack of access to land, information, and credit in Ethiopia. A probit model is used to examine the factors influencing farmers' decision to adapt to perceived climate changes. Factors influencing farmers' decision to adapt include wealth, and access to extension, credit, and climate information in Ethiopia; and wealth, government farm support, and access to fertile land and credit in South Africa. Using a pooled dataset, an analysis of the factors affecting the decision to adapt to perceived climate change across both countries reveals that farmers were more likely to adapt if they had access to extension, credit, and land. Food aid, extension services, and information on climate change were found to facilitate adaptation among the poorest farmers. We conclude that policy-makers must create an enabling environment to support adaptation by increasing access to information, credit and markets, and make a particular effort to reach small-scale subsistence farmers, with limited resources to confront climate change.

Source: Ask your librarian to help locate this item.

Resource Description

Communication: ☑

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☑

audience to whom the resource is directed

Policymaker, Public

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Security, Precipitation, Temperature

Food/Water Security: Agricultural Productivity

Geographic Feature:

resource focuses on specific type of geography

Rural

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Country

Other African Country: Ethiopia;South Africa

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status, Workers

Resource Type:

format or standard characteristic of resource

Research Article

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content